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Scan's regular Research columns feature is refereed by Dr Ross J. Todd. Research columns continues to build a value for research as a process, strengthening the theoretical basis for the practice of teacher librarianship. It gives particular emphasis to demonstrating how research can inform practice through the application of findings, questioning of assumptions, and identification and analysis of practical problems. This issue asks teacher librarians to focus on the exciting educational potential of the technology intensive environment so that thinking and creating become the predominant actions.

The changing information environment and student learning

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With a growing body of research now over 15 years old, we generally accept the premise that information technology and tools are essential for addressing syllabus outcomes, the complexities of learning, and quality teaching in information intensive and technology intensive 21st century schools. Rapid changes in the information and technology landscape, particularly the developments with Web 2.0, are opening up exciting and challenging opportunities for school libraries (Todd, 2008). Horrigan, (2007) heralds these developments as the *commons of cyberspace* and *the next phase of the information society.* This changing information environment, with its particular focus on digital content and a movement from consumption of information to creation of information, open choice, collaborative and participatory digital spaces, and the transition of the web environments, is an open invitation for teacher librarians to rethink, re-imagine and recreate dynamic learning environments for school libraries. Read again: emphasis on dynamic learning environments.

Selection tools for learning purposes

Amidst the tide of blogging, online journaling and writing diaries, posts, discussion threads, streams of conversation, participating in collaborative wikis, swimming in a veritable sea of RSS feeds, building social networks and communities, receiving and sharing podcasts, it is easy to be captivated by these important technical developments. We have to catch our breath and think and question: what are we doing? Where are we going with this? What has to be the centrepiece of our professional pursuits with these developments?

...teacher librarians sharing their expertise and engaging their school communities in a range of learning experiences.

We are being encouraged to engage ourselves and our students with these technical tools, to lead the way in their use across the school. It is very important to do this, and I see many teacher librarians developing and sharing their expertise with these tools in their schools, and engaging their school communities in a range of learning experiences. My email is awash with wiki and blog updates, RSS feeds, with invitations (or expectations) that I will participate in numerous blogs because of my academic role, and being chastised for seemingly not doing so. Technocrati's report on the state of the blogosphere

(2008) <technorati.com/blogging/state-of-the-blogosphere> shows not just its pervasive global reach, but also the phenomenal growth in the number of blogs reported daily.

Just last week, I was invited to speak at the opening of a refurbished school library, now called a learning commons, at Chelmsford High School in Massachusetts (see *The Boston Globe* story, and readers comments on this event at <www.boston.com/news/education/k_12/articles/2008/12/08/new_learning_commons_defies_commonplace>). The new facility, which has created enormous interest across the school and the community, is a testament to the commitment of the school librarian's vision and current actions to enable active and collaborative learning across a state of the art print and digital environment. The signage in the learning commons consists of three powerful words:

ask
think
create

There is also a statement by John F. Kennedy on one wall:

> *We set sail on this new sea because there is knowledge to be gained.*

The school library is the school's physical and virtual learning commons, where inquiry, thinking, imagination, discovery, and creativity are central to students' information-to-knowledge journey, and to their personal, social and cultural growth. In the context of the rich development in the technological and information environments for our students, and the engagement of our students in this wave of technical tools, we must not lose sight of the core work of school libraries:

- enabling the transformation of information to deep knowledge and deep understanding
- developing students' attitudes, values, and beliefs.

This is constructivist learning.

Constructivist learning challenges us to move beyond mastery of technical tools and the technology of creating spaces, which become vessels for the dumping and transmission of information, to focusing on the intellectual input of those spaces so that thinking and creating become the predominant actions. Certainly it is important to develop mastery of the technical dimensions of these tools, but within these tools, the complex scaffolds for knowledge creation and production, both individual and collaborative, are essential.

Take blogging, for instance.

- What constitutes a sustained response or comment in a blog?
- What is the substance of the response?
- How is this shaped by and enabled by the learning goals?
- How is this shaped by where students are at with their inquiry?

Blogging has to be more than students just doing the same kind of writing they have always done and merely putting it up on the web. Its centrepiece has to be the critical engagement with ideas, and fostering the intellectual development of students as they work towards syllabus outcomes. There are of course a variety of responses:

- Expository response: where students provide accurate and authoritative information
- Explanatory response: where the focus is on explanation
- Critical response: where students address previous postings with analysis, argument and evidence
- Analytical response: involving further comparison and analysis, where students identify patterns, trends, themes, issues and associations across postings
- Synthesis response: where students develop conclusions, establishing personal viewpoints and perspectives, and generate position statements from their process of critical analysis and synthesis of multiple postings
- Reflective response: where students reflect on their learning; show internalisation of the range of ideas and personal application.

...wikis provide rich opportunities for students to engage in the social construction of knowledge and to negotiate meaning in a shared information space.

And then of course there are wikis. As open, shared, editable spaces, wikis provide rich opportunities for students to engage in the social construction of knowledge and to negotiate meaning in a shared information space. Go to any entry on *Wikipedia* and view the history to see the development of the representation of a topic. Use the *Compare selected versions* tab to see how representations have changed, and how people have worked to generate and maintain a document. Wikis are living documents, knowledge creation in action.

It is important to carefully consider the range of competencies that underpin the effective use of wikis, and for teacher librarians and classroom teachers to ensure that the thinking and creative dimensions of using wikis are appropriately developed. For example, beyond the technical requirements of creating a wiki space – the medium – there is the fundamental dimension of populating the space with content – the message. As with blogs, this demands the construction of sustained responses and the competencies involved in the publishing of those messages, based on the purpose, nature and sequence of the learning task, and the stage of the constructive process. These

knowledge construction processes, and the thinking and problem solving processes that underpin this, are complemented by other key competencies, such as learning:

- how teams work together in safety and security
- how to deal with team issues such as conflict, for example, when someone edits a collaborative piece without justification or explanation
- negotiation skills, such as a group negotiating to agree on correctness, meaning, relevance of ideas that individuals are posing
- team management and project management competencies, such as planning, creating and staying with timelines, role assignments, and delegation responsibilities
- group communication protocols
- document management and version management procedures.

The technical momentum is there, but the intellectual momentum is needed to ensure that these tools are integrated thoughtfully into students' learning with meaningful inquiry tasks and the appropriate development of the analytical, critical thinking, and reflective scaffolds to construct meaning and understanding.

A key challenge is to lead, and demonstrate the rich educational potential, and document evidence of significant learning outcomes, including virtual publishing and broadcasting of newly gained knowledge and skills. Our research columns in recent issues has focused on evidence based practice and reflective practice, with teacher librarians leading the way. The column in this issue of *Scan* continues that important work. ■

References and further reading

Burge, K. (2008) 'New 'learning commons' defies commonplace: Chelmsford library revamped', *The Boston Globe*, December 8, 2008. Viewed 19 January 2009. <**www.boston.com/news/education/k_12/articles/2008/12/08/new_learning_commons_defies_commonplace**>.

Horrigan, J. (2007) *A typology of information and communication technology users*, Pew Internet & American Life Project, Washington DC. Viewed 19 January 2009. <**www.pewinternet.org/pdfs/PIP_ICT_Typology.pdf**>.

Todd, R. (2008) 'Youth and their virtual networked words: research findings and implications for school libraries', *School Libraries Worldwide* 14(2) July 2008, pp. 19–34.

Kindergarten weaves a wiki: the learners tell their stories

Ian McLean *is the teacher librarian at Penrith Public School. A former editor of Scan, he has returned to teacher librarianship after four years in the classroom.*

In this article, Ian describes how he collected and interpreted research data from 12 Early Stage 1 (Kindergarten) students, tracking their emerging awareness of, and access to, the internet and Web 2.0 tools. An online wiki was used to create jointly constructed fables, and to share the final products (and the annotated learning journey) with the extended school community - and beyond.

In his *PowerPoint* presentation about evidence based practice, 'Knowing and showing how school library programs help students learn' (2004), Dr Todd advocates that educators make use of:

- exhibitions and displays of products, plus student self assessments of learning
- putting up 'the story' of learning, as well as the products of new learning
- letting the 'voices' of students tell the story (Todd, 2004).

Can the use of a wiki in literacy activities raise Early Stage 1 students' awareness of information communication technologies? Can it also facilitate the students' interactions with parents and caregivers about the literacy outcomes being achieved at school? The development of Web 2.0 tools provides multiple opportunities for teacher librarians to demonstrate their educational potential and impact.

Literature review: a selection of quotations

In the 2006 document, *Our young learners: giving them the best possible start: an education strategy for the early years from Kindergarten to Year 4, 2006–2009*, the New South Wales Department of Education & Training takes the position that

> *Young children are eager to learn. We must continue to nurture the*